What is claimed:

1. A method of detecting one or more substances of interest comprising:

exposing said one or more substances of interest to a detecting device, said device comprising a plurality of nanogaps, one or more nanogaps having one or more probe molecules attached therein and able to attach to said one or more substances of interest;

exposing said detecting device to a material suspected to contain said one or more substances of interest;

measuring a capacitance or dielectric properties at different frequency range of one or more nanogap devices; and

thereby statically and/or dynamical detecting presence of said one or more substances of interest.

2. A method of detecting conformations of one or more substances of interest comprising:

exposing said one or more substances of interest to a detecting device, said device comprising a plurality of nanogaps;

measuring a capacitance or dielectric properties at different frequency range of one or more nanogap devices; and

thereby statically and/or dynamical detecting conformations or other reaction changes of said one or more substances of interest.

3. A method of fabricating a nanogap device comprising:

placing a first selectively removable layer on a substrate surface, said substrate surface defining a horizontal orientation;

selectively removing a plurality of channels in said first layer, said channels characterized by a channel width and channel walls substantially vertical to said substrate surface;

placing a second selectively removable layer over said channels such that said second layer coats vertical sides of said channels without filling said channels, said vertical coating characterized by a vertical coating width;

placing a third layer over said layers such that said third layer fills said channels;

removing a vertical portion to expose a surface comprising regions of said first layer and regions of said third layer separated by regions of said second layer; and

removing said second layer to create a device having regions of said first layer and said third layer separated by gaps having widths largely determined by said vertical coating width.

4. The method of claim 3 further comprising:

placing a fourth selectively removable layer on said second layer prior to said selectively removing a plurality of channels.

5. The method of claim 3 further comprising:

selective removing a horizontal portion of said second layer prior to said placing said third layer.

6. The method of claim 3 further wherein:

said substrate comprises an upper layer of SiN and a lower layer of Si.

7. The method of claim 3 further wherein:

said first and/or said third layer comprises Poly-Si.

8. The method of claim 3 further wherein:

said second and/or said fourth layer comprises an oxide.

9. The method of claim 3 further wherein:

said substrate comprises any appropriate material for fabricating nanoscale devices.

10. The method of claim 3 further wherein:

said first and/or said third layer comprises any material that can be deposited on and selectively removed from said substrate.

11. The method of claim 3 further wherein:

said second layer comprises any material that can be deposited so as to provide a layer of appropriate thickness in said channels.

12. The method of claim 3 further wherein:

said channel width is a width near a smallest channel width achievable using selective mask etching.

13. The method of claim 3 further wherein:

said vertical coating width and said gap width are of similar sizes of approximately 50 nm.

14. The method of claim 3 further wherein:

said vertical coating width and said gap width are of similar sizes between approximately 5 nm and 100 nm.

15. The method of claim 3 further comprising:

attaching self-assembled monolayer (SAM) probe molecules in said gap;

exposing said gaps to material suspected to contain ligands of said probe molecules; and

detecting bindings of said ligands to said probe molecules by measuring a capacitance across said gap.

16. The method of claim 15 further wherein:

said self-assembled monolayer (SAM) probe molecules comprise single-strand oligonucleotides;

said ligands comprise one or more suspected complementary single-strand oligonucleotides;

said bindings comprise hybridization of said probe molecule and said ligands.17. The method of claim 15 further wherein:

said self-assembled monolayer (SAM) probe molecules comprise single-strand oligonucleotides;

said ligands comprise one or more suspected complementary single-strand oligonucleotides;

said bindings comprise hybridization of said probe molecule and said ligands;

said probe molecules are in a solid state during detecting;

capacitance is measured at a range of frequency within a range of about 75 kHZ to about 5 MHZ;

two parallel electrodes used with capacitance measured between them;

said probe is a relatively short nucleotide probe of 20mer to 40mer.

18. A capacitor-based biodetector comprising:

a plurality of parallel electrodes arranged on a substrate with gaps between them;

a plurality of receptor probe molecules arranged between said electrodes in said gaps;

circuitry for measuring capacitance between pairs of said electrodes.

19. The device according to claim 18 further wherein:

said gaps are parallel to said substrate.

20. The device according to claim 18 further wherein:

said gaps are perpendicular to said substrate.

21. The device according to claim 18 further wherein:

said gaps are between 5 to 100 nm.

22. The device according to claim 18 further wherein:

said probe molecules comprise one or more selected from the group:

self-assembled monolayers (SAM) in said gaps;

single-strand oligonucleotides;

single-strand DNA; or

amino acid templates.

23. The device according to claim 18 further wherein:

said probe molecules comprise biologic sequence of between 20 and 60 base pairs.

24. The device according to claim 18 further wherein:

said circuitry is able to measure at a range of frequency within a range of about 25 kHZ to about 10 MHZ.

25. The device according to claim 18 further comprising:

nanoplumbing features to move substances to appropriate positions of said device.

26. A nanogap hybrid device comprising:

a plurality of gap means systematically arranged in an solid state fabricated structure;

a plurality of receptor molecules arranged in said gaps; and

means for detecting capacitance across said gaps.

27. A detector for one or more substances of interest comprising:

means for exposing said one or more substances of interest to an integrated solid state detecting device, said device having arranged therein one or more molecules able to attach to said one or more substances of interest;

means for measuring electronic characteristics of interest in small regions of said device; and

means for using measured electronic characteristics to signal the presence of said one or more substances of interest.

28. The device according to claim 26 further wherein:

said device is creating using novel nanotechnology batch-fabrication techniques;

said device comprises polysilicon chips riddled with nanogap junctions;

immobolized within each nanogap is at least one strand of reference single-strand DNA;

a voltage is applied across one or more of said nanogap junctions and a measurement is taken of capacitance;

wherein capacitance is determined by the dielectric (insulating) property of the material in the nanogap, which changes as a result of hybridization; and

wherein detecting is accomplished by adding a sample DNA and measuring a difference of capacitance after hybridization.

29. A capacitor-based biodetector device comprising:

a plurality of nanogap junctions arrays, each array comprising a plurality of nanogap junctions;

a nanofluidic network connecting to said plurality of arrays; and

a plurality of electrode connections for connecting electrical signals to said arrays.

30. The device according to claim 29 further comprising:

a plurality of receptor probe molecules arranged in said nanogap junctions.

31. The device according to claim 29 further comprising:

a covering over said plurality of arrays, said covering having at least one inlet and at least one outlet.

32. A method of fabricating a nanogap device comprising:

placing a first selectively removable electrode layer on a substrate surface, said substrate surface defining a horizontal orientation;

selectively removing a portion of said first selectively removable electrode material;

attaching a sacrificial molecular layer to a portion of said first electrode material;

placing a second selectively removable electrode layer on a substrate surface, said second electrode layer abutting said sacrificial molecular layer;

removing said sacrificial molecular layer to form a nanogap channel between said electrode layers.